



NEW ZEALAND

 EDICT OF GOVERNMENT

In order to promote public education and public safety, equal justice for all, a better informed citizenry, the rule of law, world trade and world peace, this legal document is hereby made available on a noncommercial basis, as it is the right of all humans to know and speak the laws that govern them.

AS-NZS 1841-6 (2007) (English): Portable fire extinguishers - Part 6 - Specific requirements for carbon dioxide type extinguishers [By Authority of New Zealand Hazardous Substances (Compressed Gases) Regulations 2004 (SR 2004/43)]

*We will sell to no man,
we will not deny or defer to any man either justice or right.*

Magna Carta—Tūtohunga Nui

*Kore rawa e hoko ki te tangata, e kore e whakakāhoretia,
e tautuku rānei te tangata ki te ture, tika ranei.*



BLANK PAGE



Australian/New Zealand Standard™

Portable fire extinguishers

Part 6: Specific requirements for carbon dioxide type extinguishers

1 SCOPE

This Standard specifies requirements for portable rechargeable fire extinguishers of the carbon dioxide type. It does not apply to the design and construction of the gas cylinder within which the carbon dioxide is contained.

2 APPLICATION

Portable, rechargeable, carbon dioxide fire extinguishers shall comply with AS/NZS 1841.1 and the requirements of this Standard.

Where requirements differ, this Standard shall take precedence.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

2030 The verification, filling, inspection, testing and maintenance of cylinders for storage and transport of compressed gases

2030.1 Part 1: Cylinders for compressed gases other than acetylene

2473 Valves for compressed gas cylinders

2473.1 Part 1: Specifications, type testing and manufacturing tests and inspections

3791 Hydraulic hose

4078 Fire protection—Fire extinguishing media—Carbon dioxide

AS/NZS

1841 Portable fire extinguishers

1841.1 Part 1: General requirements

Hazardous Substances (Compressed Gases) Regulations 2001 (New Zealand)

Hazardous Substances and Noxious Organisms Regulations 2001 (New Zealand)

4 EXTINGUISHANT

The carbon dioxide gas extinguishant shall comply with AS 4078.

Commercial dry nitrogen is used for pressurization for filling ratio No. 2 (see Clause 5(b)).

5 FILLING RATIO

Carbon dioxide type extinguishers shall be filled to one of the following ratios:

- (a) When the extinguisher is required to operate at temperatures $> -20^{\circ}\text{C}$ or $< 65^{\circ}\text{C}$, the maximum filling ratio shall be 0.667.
- (b) When the extinguisher is required to operate at temperatures below -20°C , the maximum filling ratio shall be 0.50. A pressure of up to 1.4 MPa of nitrogen may be superimposed above the normal pressure in the container at 15°C .
- (c) Where the extinguisher is expected to be exposed to temperatures above 65°C , specialist advice about filling ratios shall be obtained and followed.

Extinguishers shall be filled using the filling ratio specified in Item (a) except where special climatic conditions exist, i.e., exposure to low temperatures.

NOTE: Filling ratio is the ratio of mass of liquefiable gas in the cylinder to the mass of water the cylinder will hold at 15°C .

6 FILL TOLERANCE

The extinguisher shall be dry internally and be filled with dry carbon dioxide to the specified maximum filling ratio within a tolerance of $+0, -2.5\%$, the mass being determined by weighing.

7 MATERIALS AND CONSTRUCTION

The cylinder shall be designed and constructed in accordance with one of the approved cylinder specifications listed in AS 2030.1 and the Hazardous Substances and Noxious Organisms Regulations 2001 (Class 2-Gases) (New Zealand), or Hazardous Substances (Compressed gases) regulations 2001 (New Zealand), as applicable to carbon dioxide.

The valve shall be fitted direct to the cylinder; adaptors shall not be used.

8 VALVE STEM THREAD

The valve stem thread and mating cylinder neck thread shall comply with AS 2030.1 or shall withstand a pressure of not less than 10 times the cylinder test pressure.

9 VALVE

The body of the valve shall comply with this Standard and AS 2473.1. Castings shall not be used.

The valve shall be provided with a safety release incorporating an anti-recoil device, so arranged as to release the gas when the pressure reaches a value between 17.9 MPa and the cylinder test pressure.

The aggregate area of the limiting orifice on the safety device channel shall be greater than 0.5 mm^2 per kilogram of cylinder water capacity.

10 DISCHARGE FITTINGS

10.1 General

Carbon dioxide type fire extinguishers need not be fitted with a hose, so long as they have either a swivel horn or a fixed nozzle. Any extinguisher fitted with a fixed nozzle or swivel horn shall discharge in the direction parallel to the plane of the handle.

10.2 Discharge horn

10.2.1 General

A discharge horn shall be constructed of electrically non-conductive material.

10.2.2 Horn fitted to valve

Where the horn is fitted directly to the operating head and is intended to be adjustable, the joint shall be constructed so that it enables free movement without leaks developing during testing and shall be of a type that will enable the horn to be directed without being held in position.

10.2.3 Horn fitted to hose

Where the horn is connected to the discharge head by a hose, the following shall be provided:

- (a) Means for firmly securing it to the body of the extinguisher when not in use. This may be by clips or other means that provide for quick release.
- (b) A handgrip on the hose or horn constructed of thermal insulating material to protect the operator's hand from the effects of low temperature.
- (c) Means to prevent the separation of the hose and the horn during use (e.g., by a connection becoming loose).

11 DISCHARGE HOSE

Where a discharge hose is provided it shall be flexible and have a minimum working pressure of 15.5 MPa and comply with the performance requirements of AS 3791 for Class 100R type hose. The hose assembly shall not be subjected to any internal pressure until the extinguisher is in operation.

12 MARKING

In addition to the requirements of AS/NZS 1841.1 every carbon dioxide-type extinguisher shall be marked with the following:

- (a) The words 'CARBON DIOXIDE'.
- (b) The size, in terms of the mass of carbon dioxide, in kilograms.
- (c) The cylinders shall be permanently marked in accordance with the requirements of AS 2030.1.
- (d) The full and empty mass of the individual extinguisher shall be stamped on the valve. The mass shall be expressed, in kilograms, to two decimal places. The mass shall include the valve, internal discharge tube and carrying handle, but no horn or hose and horn assembly. The full mass shall be the empty mass plus nominal charge.

This Australian/New Zealand Standard was prepared by Joint Technical Committee FP-003, Fire Extinguishers. It was approved on behalf of the Council of Standards Australia on 20 June 2007 and on behalf of the Council of Standards New Zealand on 6 July 2007 and published on 31 August 2007.

The following are represented on Committee FP-003:

Association of Accredited Certification Bodies
Australasian Fire Authorities Council
Australian Building Codes Board
Australian Competition and Consumer Commission
Certification Interests (Australia)
Fire Protection Association Australia
Fire Protection Association New Zealand
Institution of Fire Engineers
Insurance Council of New Zealand
WorkCover New South Wales

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for the improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia International or Standards New Zealand at the address shown on the back cover.

Originated in Australia as part of AS A138—1963.
Revised and designated AS 1847—1976.
Second edition 1985.
Revised and designated, in part, AS 1841.6—1992.
Originated in New Zealand as NZS 2018:1965.
Final New Zealand edition NZS 4508:1979.
AS 1841.6—1992 and NZS 4508:1979 jointly revised,
amalgamated and designated AS/NZS 1841.6:1997.
Second edition 2007.

This Standard was issued in draft form for comment as DR 06682.

COPYRIGHT

© Standards Australia/Standards New Zealand

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Jointly published by Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and
Standards New Zealand, Private Bag 2439, Wellington 6020